**Influence of Root Canal Filling Techniques on Sealer Penetration**

**and Gutta Percha/Sealer Ratio: a Confocal Laser Scanning Microscopy Analysis**

**aFatma Macit Ermis, bFaruk Haznedaroğlu**

a DDS, PhD, Department of Endodontics, Faculty of Dentistry, Istanbul Medipol University, Istanbul, Turkey, ORCID no:0000-0001-7622-8501

b Proffessor, Department of Endodontics, Faculty of Dentistry, Istanbul University, Istanbul, Turkey

**Each author’s contribution to the Manuscript:**

FM Ermis: Project development, data collection, manuscript writing

F Haznedaroglu: Statistical analysis, manuscript writing and editing

**Running title:** Influence of root canal filling techniques on sealer penetration

**Category of manuscript:** Original article

**Keywords:** Obturation techniques, dentinal tubule penetration, gutta percha /sealer ratio, confocal laser scanning microscopy.

**Word count:** 2674

**Number of tables:** 2

**Number of figures:** 1

**Corresponding Author:** Fatma Macit Ermis, DDS, PhD

**Adress:** Istanbul Medipol Üniversitesi Diş Hekimliği Fakültesi Endodonti Anabilim Dalı, Esenler Hastanesi, Esenler, Istanbul/Turkey

Telephone: +90 530 640 37 52

E mail: fatmazehramacit@gmail.com

**Potential reviewers:**

Seyda Ersahan, DDS, PhD, Department of Endodontics, Faculty of Dentistry, Istanbul Medipol University, Istanbul, Turkey [seydaersahan@hotmail.com](mailto:seydaersahan@hotmail.com), 00905324054088

Mustafa Gundogar, DDS, PhD, Department of Endodontics, Faculty of Dentistry, Istanbul Medipol University, Istanbul, Turkey [mgundogar@](mailto:mgundogar@)medipol.edu.tr, 00905065089807

Both reviwers have no conflict of interest with the manuscript.